

Effect of the addition of 20% HL by weight of bitumen on

G* sin delta at 70C.

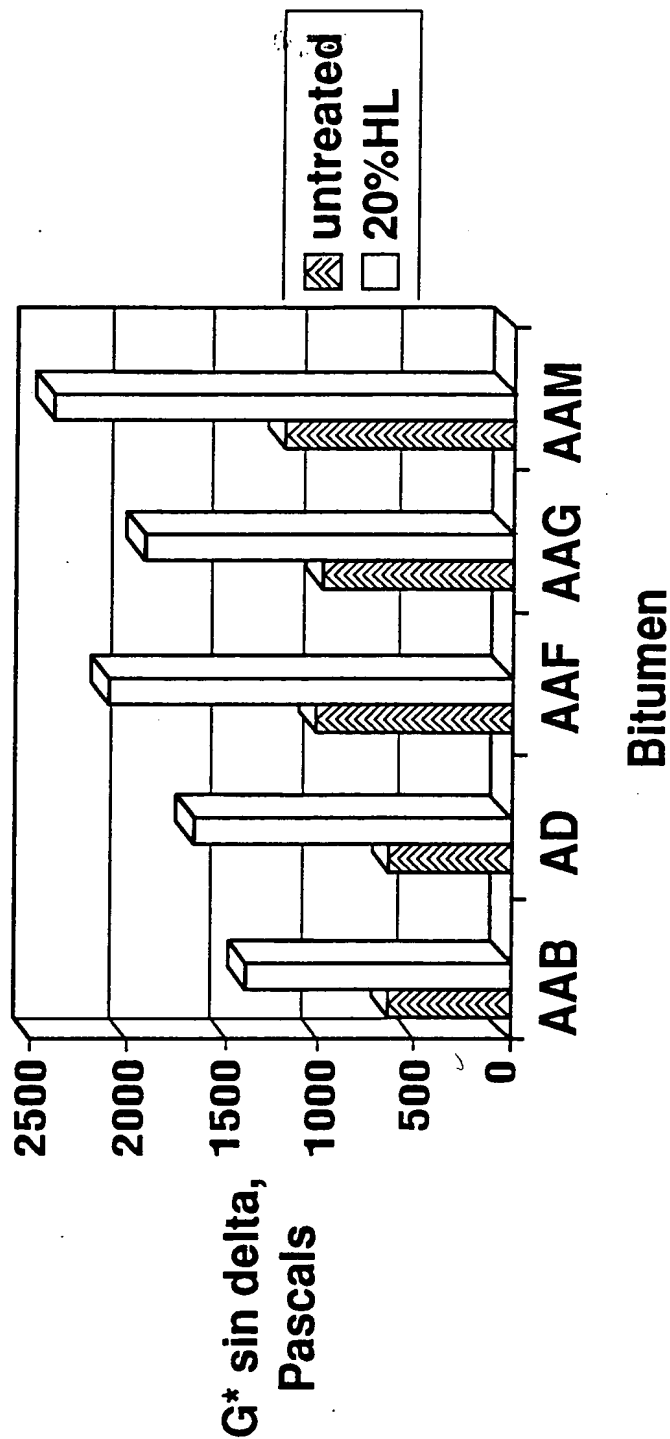


FIG. 1

Change in viscosity of AAD and HL as a function of reaction time and blending time.

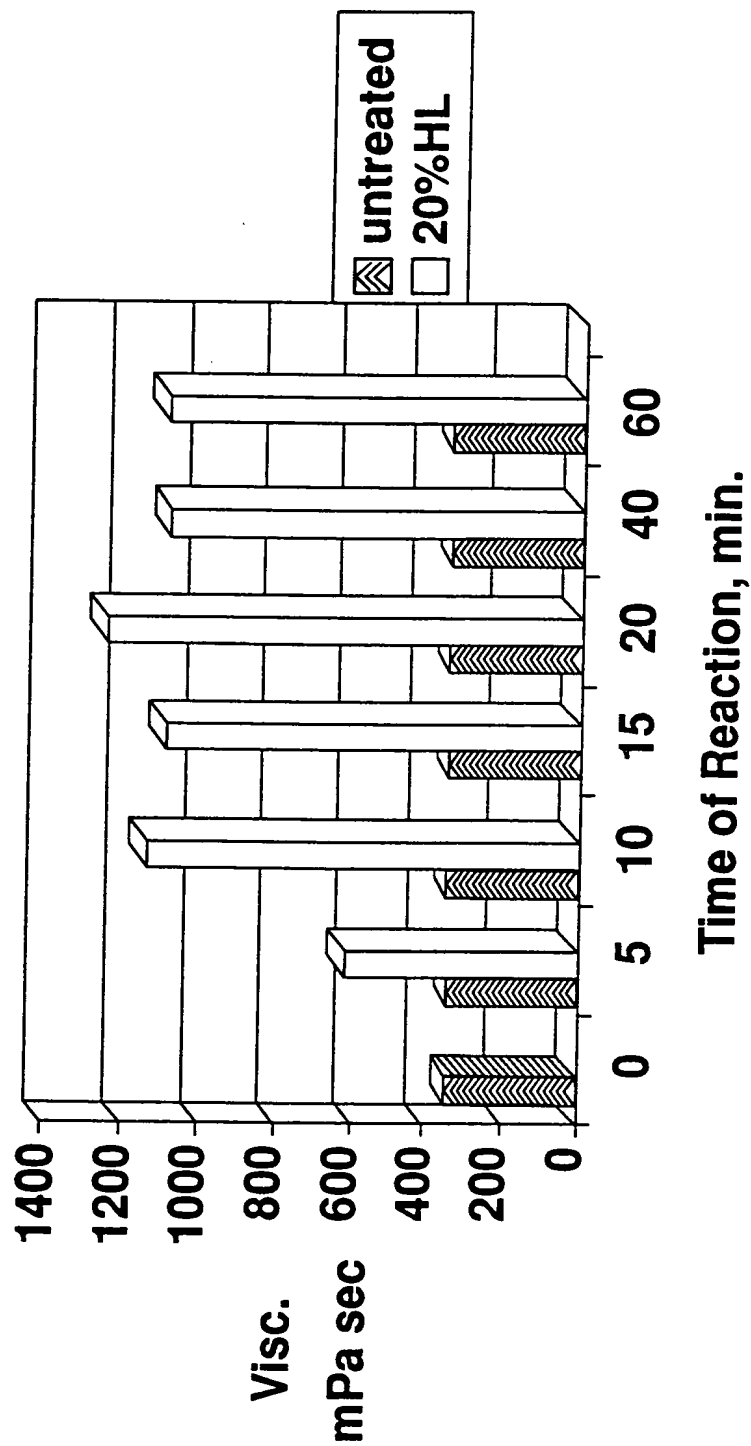


FIG. 2

Change in viscosity of AAM and HL as a function of reaction time and blending time

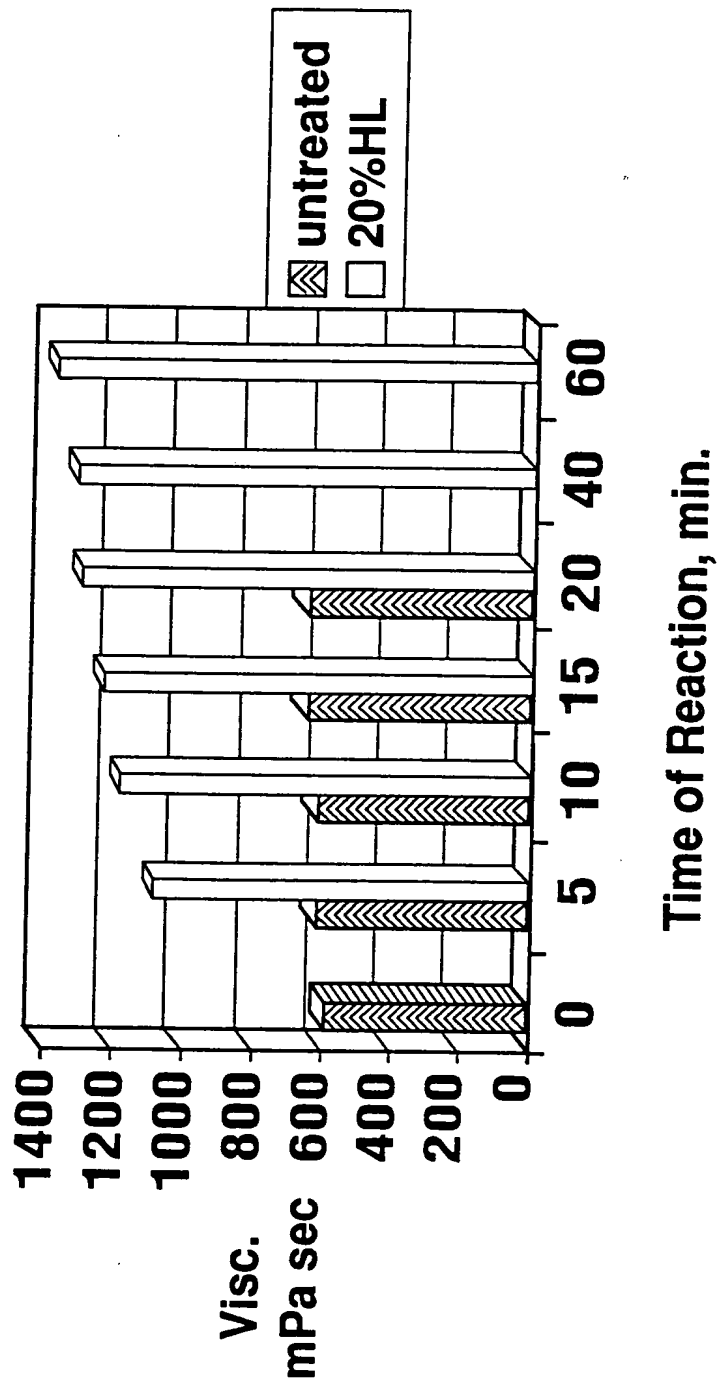
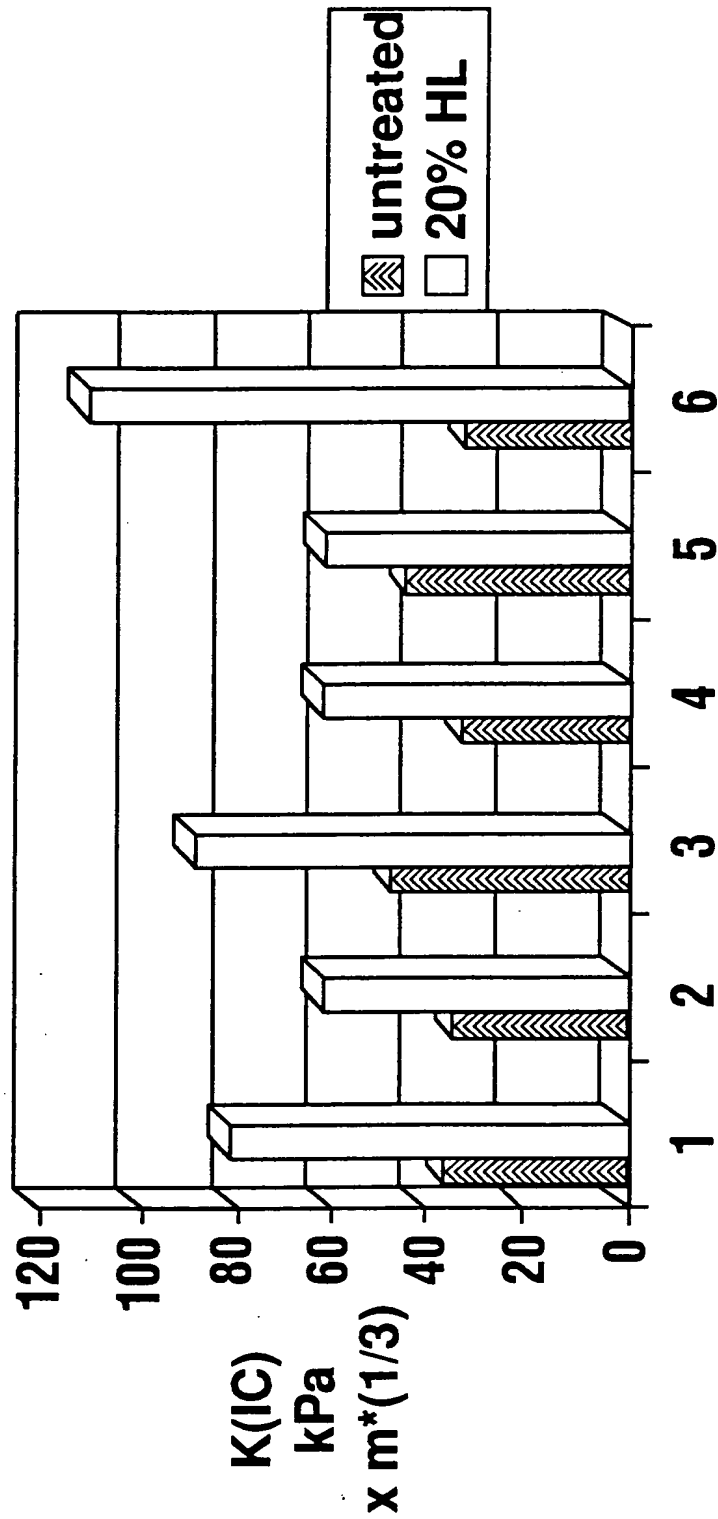


FIG. 3

Fracture toughness of AAD with 20% HL at -15C.



Sample Number

FIG.4

Effect of 20% HL on fracture toughness of AAM at -15C.

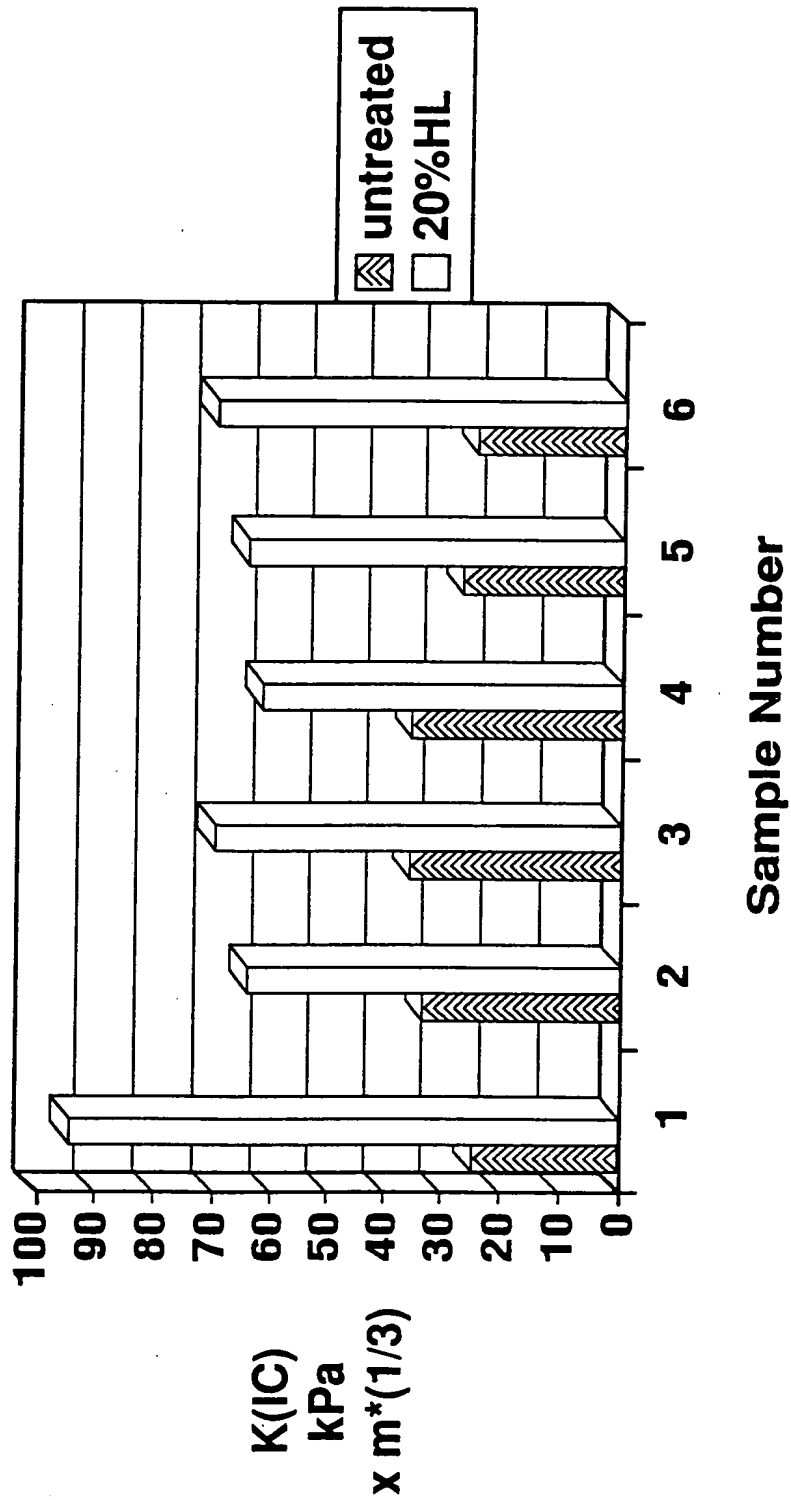
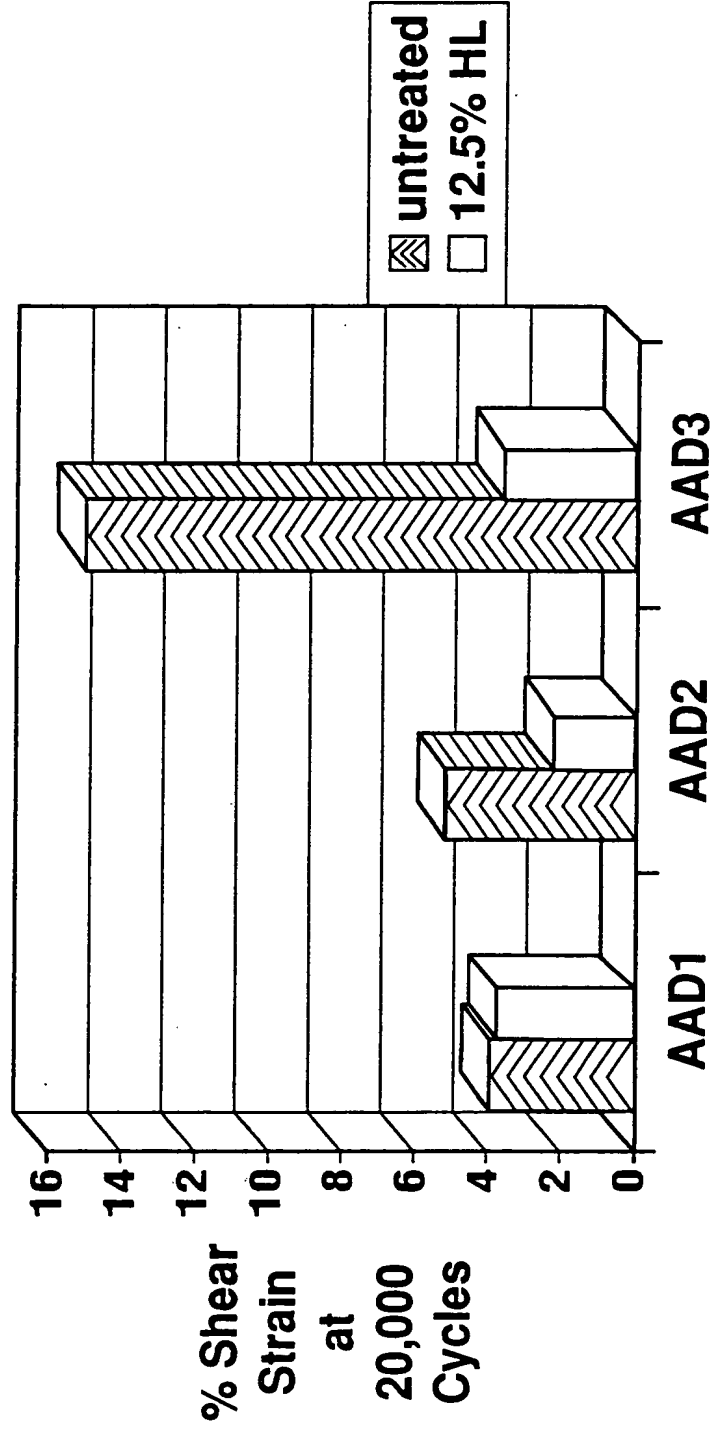


FIG. 5

Effect of HL on accumulated shear deformation for asphalt mixes using binders AAD and AAM.



Sample ID

FIG. 6

Effect of HL on controlled-strain fatigue life based on regression analysis of 21 mixtures.

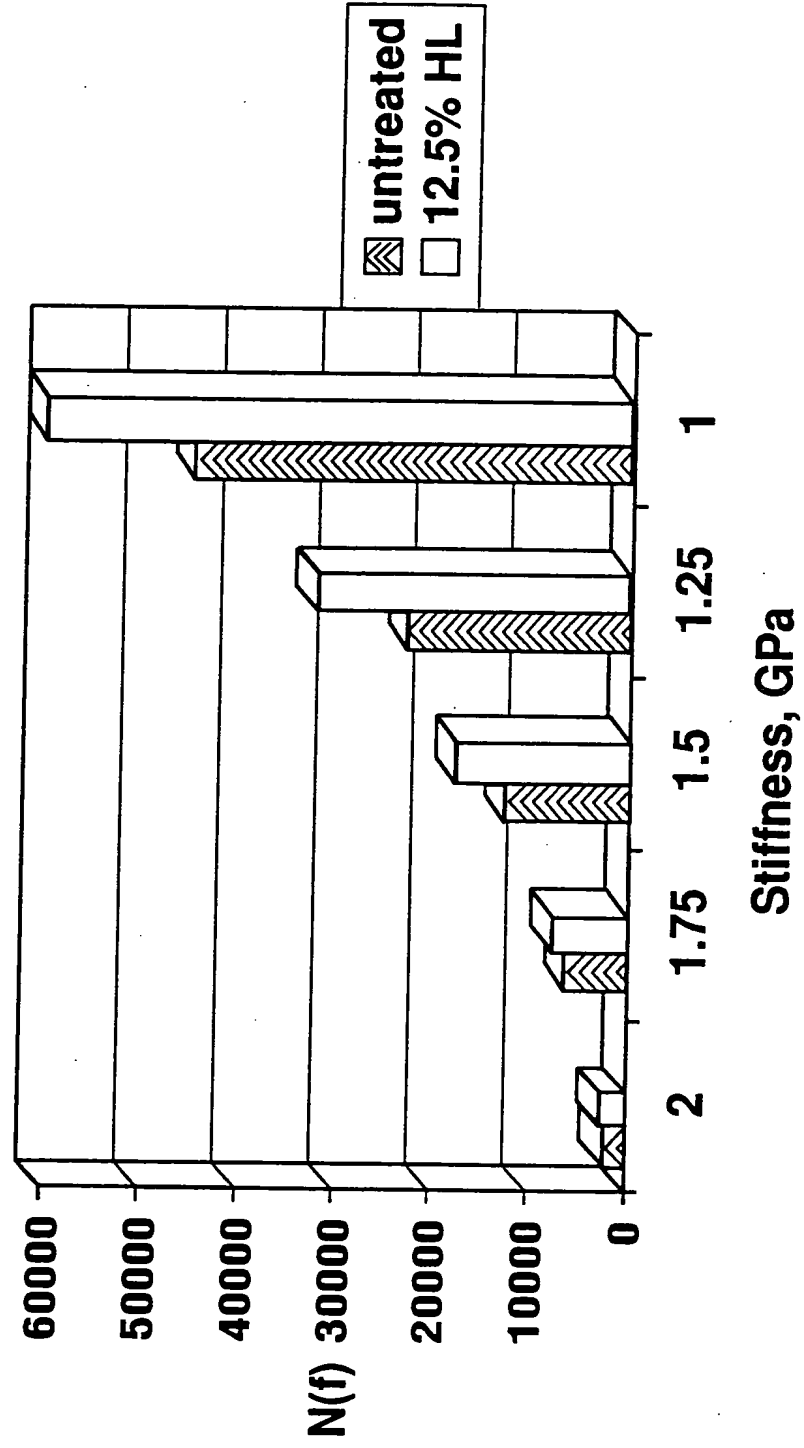


FIG. 7

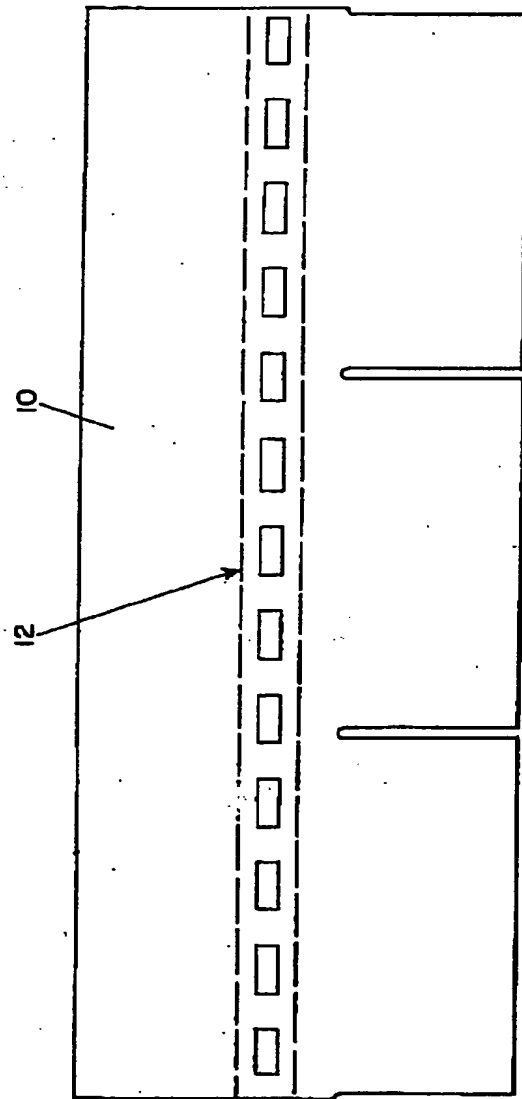


Fig. 8

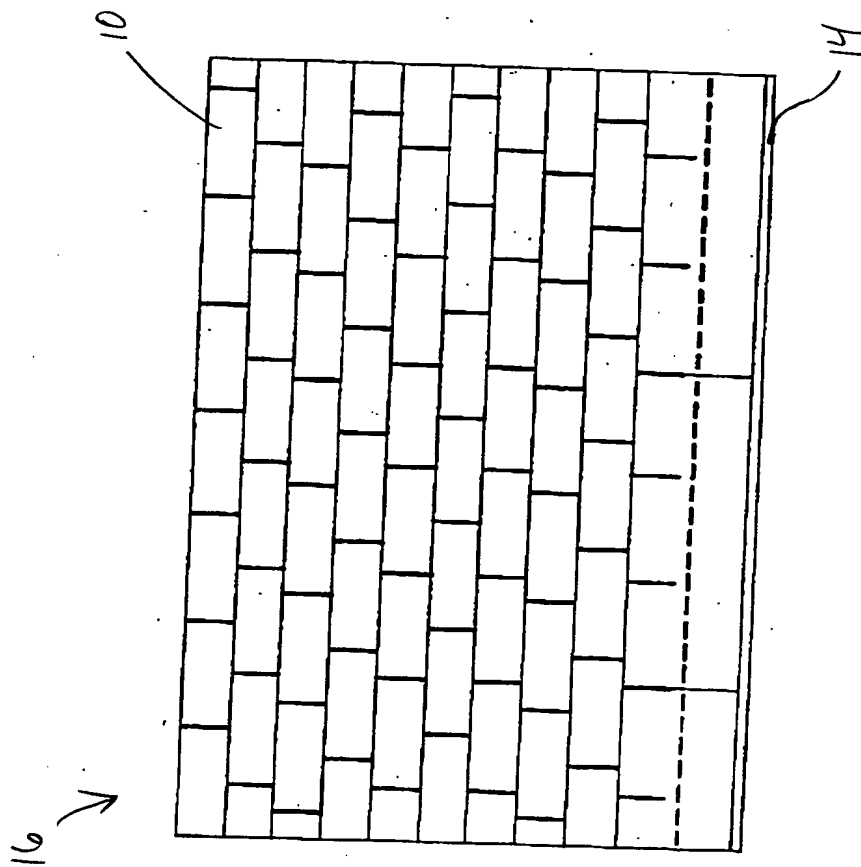


Fig. 9

Tear strength of roofing shingles

